

VPDES PERMIT FACT SHEET

This document gives pertinent information concerning the reissuance of the VPDES permit listed below. This permit is being processed as a Minor, Industrial permit. The effluent limitations contained in this permit will maintain the Water Quality Standards (WQS) of 9 VAC 25-260. The proposed discharge will result from the operation of a concentrated, aquatic animal (trout) production facility (SIC Code: 0273 – Animal Aquaculture, 0921 – Fish Hatcheries). This permit action consists of reissuing the permit with revisions to the permit, as needed, due to changes in applicable laws, guidance, and available technical information.

1. Facility Name and Address:
Orndorff Rainbow Trout Farm
5140 Zepp Road
Maurertown, VA 22644
Location: 5140 Zepp Road, Maurertown
2. Permit No. VA0091201; Expiration Date: February 28, 2013
3. Owner: Roger L. Orndorff
Title: Owner
Telephone No: (540) 436-3384
4. Description of Treatment Works: Appendix A
Total Number of Outfalls: 1
5. Application Complete Date: September 18, 2012

Permit Writer: Eric Millard
Reviewed By: Dawn Jeffries

Date: December 14, 2012
Date: December 14, 2012

Public Comment Period: January 4, 2013 to February 3, 2013
6. Receiving Stream Name: Orndorff Spring Branch
River Mile: 0.15
Use Impairment: Yes
Special Standards: pH, PWS
Tidal Waters: No
Watershed Name: VAV-B52R, Upper Cedar Creek
Basin: Potomac; Subbasin: Shenandoah
Section: 6b; Class: V
7. Operator License Requirements per 9 VAC 25-31-200.C: None
8. Reliability Class per 9 VAC 25-790: N/A
9. Permit Characterization:
☒ Private ☐ Federal ☐ State ☐ POTW ☐ PVOTW
☐ Possible Interstate Effect ☐ Interim Limits in Other Document (attach copy of CSO)
10. Discharge Location Description and Receiving Waters Information: Appendix B

Fact Sheet – VPDES Permit No. VA0091201 – Orndorff Rainbow Trout Farm

11. Antidegradation (AD) Review & Comments per 9 VAC 25-260-30:

Tier Designation: Tier 1

The State Water Control Board's WQS include an AD policy. All state surface waters are provided one of three levels of AD protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 waters have water quality that is better than the WQS. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 waters are exceptional waters and are so designated by regulatory amendment. The AD policy prohibits new or expanded discharges into exceptional waters.

The AD review begins with a Tier determination. Orndorff Spring Branch in the immediate vicinity of the discharge is listed as impaired for not meeting the General Standard (Benthics) and is therefore determined to be a Tier 1 water. AD baselines are not calculated for Tier 1 waters.

12. Site Inspection: Performed by Noel Thomas on March 6, 2008.

13. Effluent Screening and Effluent Limitations: Appendix C

14. Whole Effluent Toxicity (WET) Program Requirements per 9 VAC 25-31-220.D: N/A

15. Solids generated by fish production are managed in accordance with the Solids Management Plan (SMP) approved January 14, 2009.

16. Bases for Special Conditions: Appendix D

17. Material Storage per 9 VAC 25-31-280.B.2: This permit requires that the facility's O&M Manual include information to address the management of wastes, fluids, and pollutants which may be present at the facility, to avoid unauthorized discharge of such materials.

18. Antibacksliding Review per 9 VAC 25-31-220.L: This permit complies with the antibacksliding provisions of the VPDES Permit Regulation.

19. Impaired Use Status Evaluation per 9 VAC 25-31-220.D: Orndorff Spring Branch in the vicinity of the discharge is listed in the current 303(d) list of impaired waters for not meeting the General Standard (Benthics). A TMDL has been established for this impairment and identifies Organic Solids as the cause for the impairment. The TMDL established a WLA of 103 pounds of organic solids per year for this facility.

20. Regulation of Users per 9 VAC 25-31-280.B.9: N/A

21. Storm Water Management per 9 VAC 25-31-120: Application Required? ☐ Yes ☒ No

The SIC Code for this facility does not fall within the categories requiring storm water special conditions.

22. Compliance Schedule per 9 VAC 25-31-250: There are no compliance schedules included in the reissued permit.

23. Variances/Alternative Limits or Conditions per 9 VAC 25-31-280.B, 100.J, 100.P, and 100.M: None

24. Financial Assurance Applicability per 9 VAC 25: N/A – This facility does not serve private residences.

Fact Sheet – VPDES Permit No. VA0091201 – Orndorff Rainbow Trout Farm

25. Virginia Environmental Excellence Program (VEEP) Evaluation per § 10.1-1187.1-7: At the time of this reissuance, is this facility considered by DEQ to be a participant in the Virginia Environmental Excellence Program in good standing at either the Exemplary Environmental Enterprise (E3) level or the Extraordinary Environmental Enterprise (E4) level? ☐ Yes ☒ No
26. Nutrient Trading Regulation per 9 VAC 25-820: See Appendix C
General Permit Required: ☐ Yes ☒ No
27. Threatened and Endangered (T&E) Species Screening per 9 VAC 25-260-20 B.8: Because this is not a permit issuance or a reissuance that allows for increased discharge flows, and DCR and DGIF have not requested an opportunity to review the application, T&E screening is not required.
28. Public Notice Information per 9 VAC 25-31-280.B: All pertinent information is on file, and may be inspected and copied by contacting Eric Millard at: DEQ-Valley Regional Office, P.O. Box 3000, Harrisonburg, Virginia 22801, Telephone No. (540) 574-7813, eric.millard@deq.virginia.gov.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing if public response is significant. Requests for public hearings shall state the reason why a hearing is requested, the nature of the issues proposed to be raised in the public hearing and a brief explanation of how the requester's interests would be directly and adversely affected by the proposed permit action. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given.

29. Historical Record:

Event	Date
VPDES INDIVIDUAL PERMIT ISSUANCE - Limits for: BOD ₅ , DO, TSS, SS, and pH	11/6/1993
VPDES GENERAL PERMIT ISSUANCE - Limits for: TSS and SS	3/5/1998
VPDES INDIVIDUAL PERMIT ISSUANCE - Limits for: TSS (Interim and Final)	3/6/2003
VPDES INDIVIDUAL PERMIT REISSUANCE - Compliance based on BMP Implementation	9/24/2008

Fact Sheet – VPDES Permit No. VA0091201 – Orndorff Rainbow Trout Farm

APPENDIX A

FACILITY AND TREATMENT WORKS DESCRIPTIONS

Existing Facility and Treatment Works

Wastewater is produced by the production of trout grown in raceways and operation of a hatchery using flowing spring water. The discharge is continuous and the quantity varies with the volume of water generated by the spring. The quality of the discharge varies depending on number and size of fish in production, amount and quality of feed provided to the fish, activities performed within the raceways (e.g., feeding, maintenance, harvesting), and ambient temperature.

The farm consists of 15 raceways. A combined average flow (based on data provided in the application) of 0.754 MGD is directed out of Orndorff Spring and another second spring into the raceways. The spring water diversion began in 1967 and constitutes all of the spring flow originating upstream of the aquaculture facility. Spring water passes through a screened intake prior to being distributed into the first series of raceways. The intake screen keeps large plant material and turtles from entering the raceways.

Fish from this facility are sold to private customers. The facility does not include a slaughter operation, and the permit does not authorize the discharge of treated or untreated process wastewater to surface waters from any fish processing operation including wastewater resulting from butchering or cleaning, washing, packing and processing-related cleaning of facilities or equipment.

The permit application indicates there are no chemicals used at the facility to treat infections. Domestic sewage generated at this location is treated onsite via a septic field. The permit does not authorize the discharge of treated or untreated sewage to surface waters. The trout farm typically produces the following types, numbers, and pounds of fish annually:

Species of Fish	Pounds of Fish	
	Total Yearly	Maximum Present
Rainbow Trout	28,000-30,000 lbs.	30,000 lbs.

Treatment Works Description and Schematic

Fish raceways are primarily arranged in series, except for several smaller raceways toward the head of the facility and the hatchery pools which operate in parallel (see schematic in this appendix). Full flow settling zones are located at the ends of raceway numbers 10-15. These zones are sized to allow a combined hydraulic retention time of 15 minutes under average flow conditions. The final settling zone just prior to the effluent discharge has a surface overflow area of 164 ft². Overflow area is used to determine the settling zone overflow rate (V_o) or hydraulic loading, which is equal to flow rate divided by area. V_o must be greater than the solids settling velocity (V_s) or suspended solids will not have adequate time to settle out of the water column. According to the *Idaho Waste Management Guidelines for Aquaculture Operations*¹ (*Idaho Guidelines*), because this facility operates via gravity flow with minimal process water disturbance/turbulence, the waste solids particles will be large and the expected V_s values high, thus promoting more rapid particle settling. Recommendations included in the *Idaho Guidelines*, suggest a minimum overflow area of 92 ft² for this facility, with 185 ft² as a more conservatively sized full effluent flow settling basin. An additional 144 ft² and 136 ft² of full effluent flow settling is provided in raceway numbers 10 and 13, respectively. Full effluent flow quiescent zones are provided in raceway numbers 11, 12, and 15.

References:

1. *Idaho Waste Management Guidelines for Aquaculture Operations*. State of Idaho, Division of Environmental Quality.

Fact Sheet – VPDES Permit No. VA0091201 – Orndorff Rainbow Trout Farm

Disposal of Solids

Sediment capture units are cleaned out with a vacuum pump at least once every 1-3 weeks. Cleaning frequency varies with the number of fish on hand, weather conditions and water flow at any given time of year. Solids are applied to an adjacent agriculture field as part of the cleaning process. Further details of the land application operation are required for inclusion in the Solids Management Plan.

Flow:

All of the flow from Orndorff Spring is used by the raceways. The discharge flows described in the previous documents and the current application are:

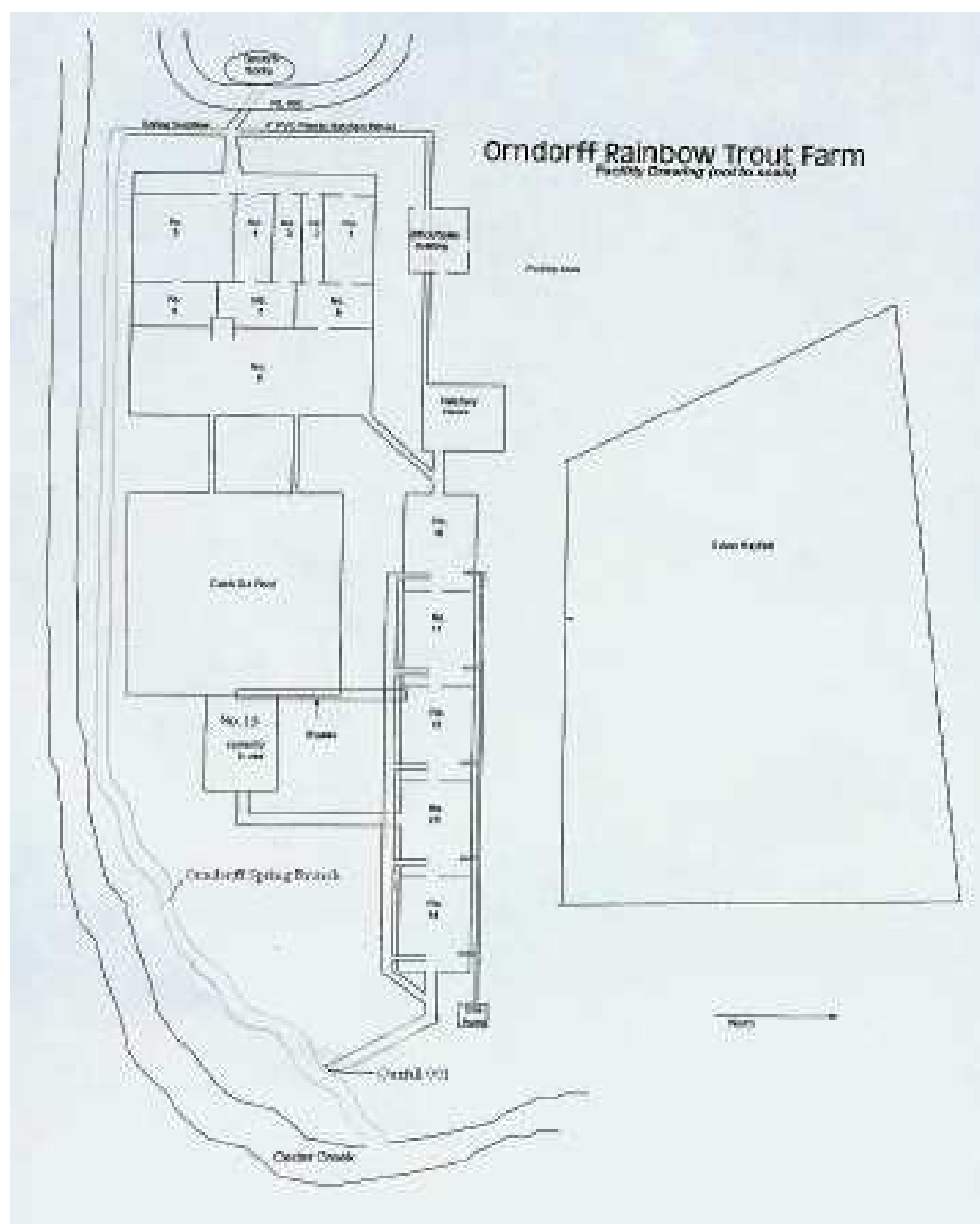
Application Submitted	Maximum Daily Flow	Average Monthly Flow	Units
2007	0.953	0.757	MGD
2012	0.792	0.754	MGD

Other Discharges from this Site:

There are no discrete storm water conveyances. Storm water from this site is discharged as sheet flow across grassy areas.

Fact Sheet – VPDES Permit No. VA0091201 – Orndorff Rainbow Trout Farm

Facility Diagram:



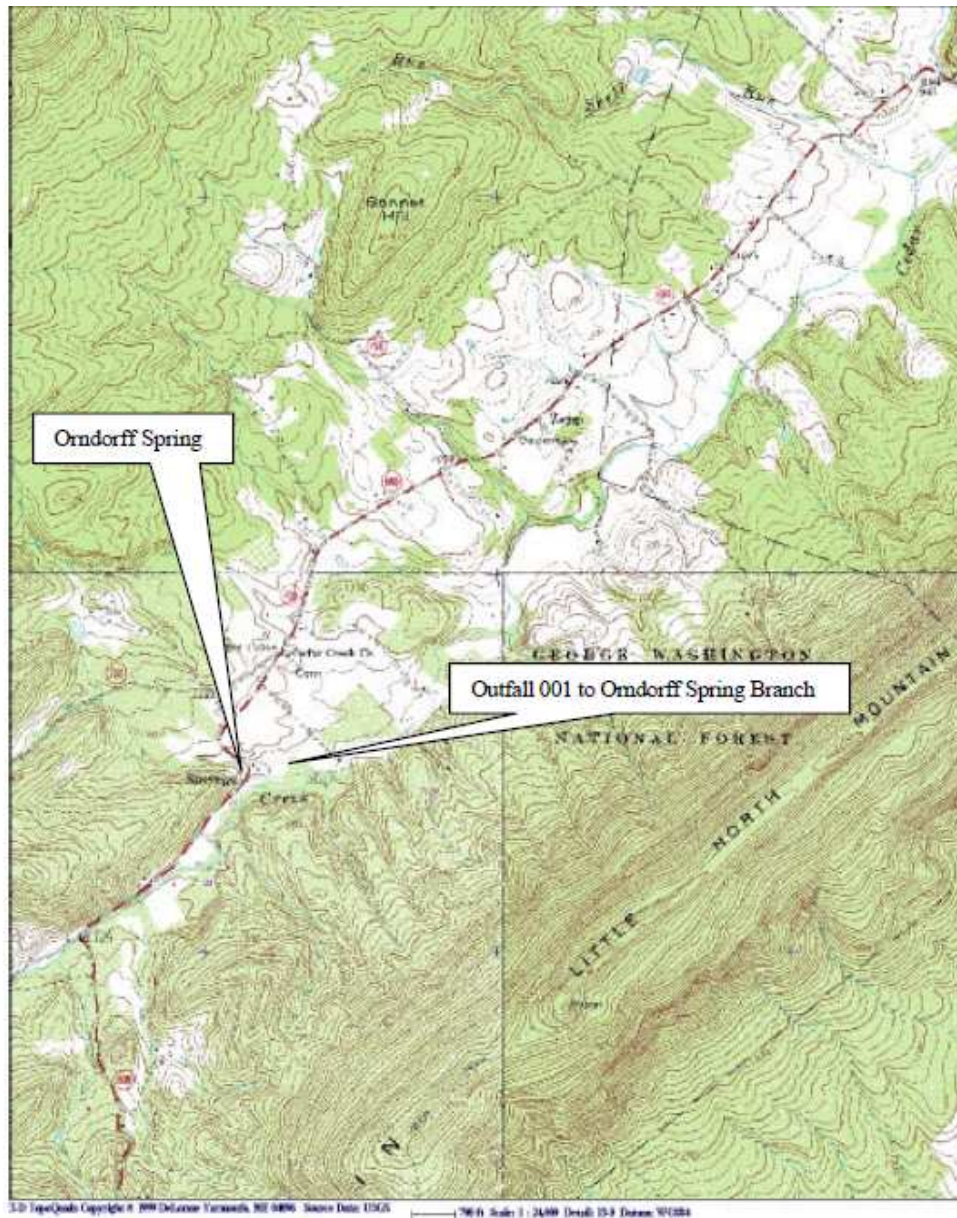
Raceway Solids Settling Zone Dimensions				
Raceway #	Post-TMDL Length, FT	Pre-TMDL Length	Width, FT	Avg. Depth, IN
10	24.0	11.2	6	18
11	9.0	9.0	7	23
12	8.0	8.0	8	22
13	17.0	4.6	8	20
14	20.5	4.0	8	27
15	4.0	4.0	6	18

APPENDIX B

DISCHARGE LOCATION AND RECEIVING WATERS INFORMATION

This facility discharges to Orndorff Spring Branch. The location of the outfall is shown on the topographic map below.

A stream flow frequency determination and mixing zone analysis are deemed unnecessary because there are no monitoring data for parameters for which the Board has adopted Water Quality Criteria.



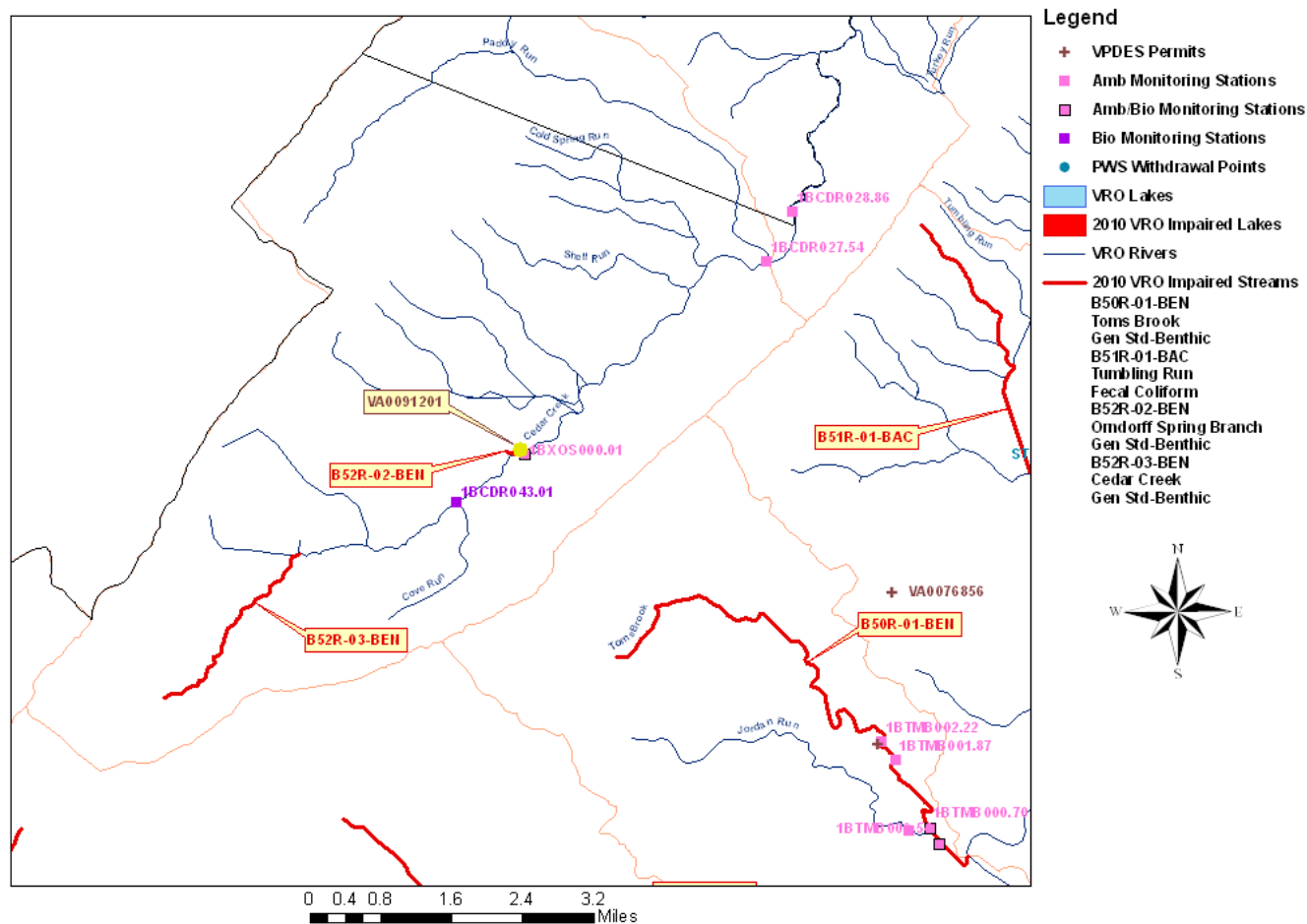
Fact Sheet – VPDES Permit No. VA0091201 – Orndorff Rainbow Trout Farm

PLANNING INFORMATION

Relevant points of interest within the watershed and in the vicinity of the discharge are shown on the Water Quality Assessments Review table and corresponding map below.

WATER QUALITY ASSESSMENTS REVIEW						
POTOMAC-SHENANDOAH RIVER BASIN						
10/9/2012						
IMPAIRED SEGMENTS						
SEGMENT ID	STREAM	SEGMENT START	SEGMENT END	SEGMENT LENGTH	PARAMETER	
B50R-01-BEN	Toms Brook	7.18	0.00	7.18	Benthic	
B51R-01-BAC	Tumbling Run	5.05	.9	4.15	Fecal Coliform	
B52R-02-BEN	Orndorff Spring Branch	.23	0.00	.23	Benthic	
B52R-03-BEN	Cedar Creek	21.07	18.54	2.53	Benthic	
PERMITS						
PERMIT	FACILITY	STREAM	RIVER MILE	LAT	LONG	WBID
VA0091201	Orndorff Rainbow Trout Farm	Orndorff Spring Branch	0.15	385928	0783042	VAV-B52R
VA0061549	Toms Brook-Maurertown Sanitary District	Toms Brook	2.17	385634	0782615	VAV-B50R
VA0076856	Wilcohes LLC - Travel Plaza 705	Snapps Run X Trib	0.66	385803	0782603	VAV-B51R
MONITORING STATIONS						
STREAM	NAME	RIVER MILE	RECORD	LAT	LONG	
Cedar Creek	1BCDR028.86	28.86				
Cedar Creek	1BCDR027.54	27.54	04/19/04	390118	782735	
Toms Brook	1BTMB001.87	1.87	06/30/03	385624	782602	
Toms Brook	1BTMB002.22	2.22	06/01/98	385637	782613	
Orndorff Spring Branch	1BXOS000.01	0.01	08/09/00	385926	783042	
Cedar Creek	1BCDR043.01	43.01	05/01/96	385859	783131	
PUBLIC WATER SUPPLY INTAKES						
OWNER	STREAM	RIVER MILE				
None						
WATER QUALITY MANAGEMENT PLANNING REGULATION						
Is this discharge addressed in the WQMP regulation? No						
If Yes, what effluent limitations or restrictions does the WQMP regulation impose on this discharge?						
PARAMETER	ALLOCATION					
WATERSHED NAME						
VAV-B52R Upper Cedar Creek						

Orndorff Rainbow Trout Farm- Water Quality Assessments Review October 9, 2012



Fact Sheet – VPDES Permit No. VA0091201 – Orndorff Rainbow Trout Farm

NPDES PERMIT RATING WORKSHEET

Facilities identified under SIC 0273 – Animal Aquaculture and SIC 0921 – Fish Hatcheries, have the following characteristics as defined in Appendix A to the NPDES Permit Rating Work Sheet found in the VPDES Permit Manual.

1987 SIC Code Title	ELG Subcategory	ELG Subcategory Title	Human Health Toxicity Number	Total Toxicity Number	Industrial Sub-Category Number
0273 – Animal Aquaculture	NR	NR	1	1	99
0921 – Fish Hatcheries	NR	NR	1	1	99

A new Worksheet was prepared at this reissuance. The results of the review are detailed below. This Worksheet indicates a Score of **50** points.

Factor 1 – Toxic Pollutant Potential: 5 Points

The facility has one process waste stream; the discharge of water from the raceways. Toxicity Group number 1 corresponds to code 1, resulting in 5 points for this factor.

Factor 2 – Flow/Stream Flow Volume: 30 Points

The instream waste concentration (IWC) was previously determined in 2002 to be >50%. For Type II wastewaters, when the IWC is >50%, the resulting score for this factor is 30 points. The 2002 and 2007 evaluations were deemed applicable to the current discharge and receiving stream conditions, and were carried forward at this reissuance.

Factor 3 – Conventional Pollutants: 0 Points

The permit does not contain limits for: Oxygen Demanding Pollutants, Total Suspended Solids (TSS), or Nitrogen Pollutants. Effluent TSS are limited through the implementation of Best Management Practices.

Factor 4 – Public Health Impact: 0 Points

Using a worst case evaluation, it is assumed that there is a public drinking water supply within 50 miles downstream of the facility. A human health toxicity number of 1 corresponds to code 1, resulting in 0 points for this factor.

Factor 5.A. – A wasteload allocation has been assigned to the discharge, resulting in 10 points for this factor.

Factor 5.B. – There are no pollutants that are water quality limited in the permit.

Factor 5.C. – The permit does not contain Toxics Management Program requirements.

Factor 6. – Proximity to Near Coastal Waters: Headquarters Priority Permit Indicator (HPRI) Code #4 – This discharge occurs in a non-coastal county. This is unchanged from the previous rating.

Fact Sheet – VPDES Permit No. VA0091201 – Orndorff Rainbow Trout Farm

NPDES PERMIT RATING WORK SHEET

NPDES NO. **VA0091201**

Facility Name: **Orndorff Rainbow Trout Farm**

City: **N/A**

Receiving Water: **Orndorff Spring Branch**

Reach Number:

Is this facility a steam electric power plant (SIC=4911) with one or more of the following characteristics?

1. Power output 500 MW or greater (not using a cooling pond/lake)
 2. A nuclear power plant
 3. Cooling water discharge greater than 25% of the receiving stream's 7Q10 flow rate
- ☐ YES; score is 600 (stop here) ☒ NO (continue)

Is this permit for a municipal separate storm sewer serving a population greater than 100,000?

- ☐ YES; score is 700 (stop here)
☒ NO (continue)

- ☐ Regular Addition
☐ Discretionary Addition
☒ Score change, but no status change
☐ Deletion

FACTOR 1: Toxic Pollutant Potential

PCS SIC Code: _____ Primary SIC Code: **0273** Other SIC Codes: _____
 Industrial Subcategory Code: **99** (Code 000 if no subcategory)

Determine the Toxicity potential from Appendix A. Be sure to use the TOTAL toxicity potential column and check one)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
<input type="checkbox"/> No process waste streams			<input type="checkbox"/> 3.			<input type="checkbox"/> 7.	7	35
<input checked="" type="checkbox"/> 1.	1	5	<input type="checkbox"/> 4.	4	20	<input type="checkbox"/> 8.	8	40
<input type="checkbox"/> 2.	2	10	<input type="checkbox"/> 5.	5	25	<input type="checkbox"/> 9.	9	45
			<input type="checkbox"/> 6.	6	30	<input type="checkbox"/> 10.	10	50

Code Number Checked: **1**

Total Points Factor 1: **5**

FACTOR 2: Flow/Stream Flow Volume *(Complete either Section A or Section B; check only one)*

Section A ☐ Wastewater Flow Only Considered

Wastewater Type (See Instructions)	Code	Points
Type I: Flow < 5 MGD	<input type="checkbox"/> 11	0
Flow 5 to 10 MGD	<input type="checkbox"/> 12	10
Flow > 10 to 50 MGD	<input type="checkbox"/> 13	20
Flow > 50 MGD	<input type="checkbox"/> 14	30
Type II: Flow < 1 MGD	<input type="checkbox"/> 21	10
Flow 1 to 5 MGD	<input type="checkbox"/> 22	20
Flow > 5 to 10 MGD	<input type="checkbox"/> 23	30
Flow > 10 MGD	<input type="checkbox"/> 24	50
Type III: Flow < 1 MGD	<input type="checkbox"/> 31	0
Flow 1 to 5 MGD	<input type="checkbox"/> 32	10
Flow > 5 to 10 MGD	<input type="checkbox"/> 33	20
Flow > 10 MGD	<input type="checkbox"/> 34	3

Section B ☒ Wastewater and Stream Flow Considered

Wastewater Type (See Instructions)	Percent of instream Wastewater Concentration at Receiving Stream Low Flow	Code	Points
Type I/III:	< 10 %	<input type="checkbox"/> 41	0
	10 % to < 50 %	<input type="checkbox"/> 42	10
	> 50 %	<input type="checkbox"/> 43	20
Type II:	< 10 %	<input type="checkbox"/> 51	0
	10 % to < 50 %	<input type="checkbox"/> 52	20
	> 50 %	<input checked="" type="checkbox"/> 53	30

Code Checked from Section A or B: **53**

Total Points Factor 2: **30**

Fact Sheet – VPDES Permit No. VA0091201 – Orndorff Rainbow Trout Farm

FACTOR 3: Conventional Pollutants

(only when limited by the permit)

A. Oxygen Demanding Pollutant: (check one) ☐ BOD ☐ COD ☐ Other: N/A

Permit Limits: (check one)			Code	Points
<input type="checkbox"/>	< 100 lbs/day		1	0
<input type="checkbox"/>	100 to 1000 lbs/day		2	5
<input type="checkbox"/>	> 1000 to 3000 lbs/day		3	15
<input type="checkbox"/>	> 3000 lbs/day		4	20

Code Checked : N/A

Points Scored: N/A

B. Total Suspended Solids (TSS)

Permit Limits: (check one)			Code	Points
<input type="checkbox"/>	< 100 lbs/day		1	0
<input type="checkbox"/>	100 to 1000 lbs/day		2	5
<input type="checkbox"/>	> 1000 to 5000 lbs/day		3	15
<input type="checkbox"/>	> 5000 lbs/day		4	20

Code Checked : N/A

Points Scored: N/A

C. Nitrogen Pollutant: (check one) ☐ Ammonia ☐ Other: N/A

Permit Limits: (check one)		Nitrogen Equivalent	Code	Points
<input type="checkbox"/>	< 300 lbs/day		1	0
<input type="checkbox"/>	300 to 1000 lbs/day		2	5
<input type="checkbox"/>	> 1000 to 3000 lbs/day		3	15
<input type="checkbox"/>	> 3000 lbs/day		4	20

Code Checked : N/A

Points Scored: N/A

Total Points Factor 3: 0

FACTOR 4: Public Health Impact

Is there a public drinking water supply located within 50 miles downstream of the effluent discharge (this includes any body of water to which the receiving water is a tributary)? A public drinking water supply may include infiltration galleries, or other methods of conveyance that ultimately get water from the above referenced supply.

☒ YES (If yes, check toxicity potential number below)

☐ NO (If no, go to Factor 5)

Determine the human health toxicity potential from Appendix A. Use the same SIC code and subcategory reference as in Factor 1. (Be sure to use the human health toxicity group column ☐ check one below)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
<input type="checkbox"/> No process waste streams	0	0	<input type="checkbox"/> 3.	3	0	<input type="checkbox"/> 7.	7	15
<input checked="" type="checkbox"/> 1.	1	0	<input type="checkbox"/> 4.	4	0	<input type="checkbox"/> 8.	8	20
<input type="checkbox"/> 2.	2	0	<input type="checkbox"/> 5.	5	5	<input type="checkbox"/> 9.	9	25
			<input type="checkbox"/> 6.	6	10	<input type="checkbox"/> 10.	10	30

Code Number Checked : 1

Total Points Factor 4: 0

Fact Sheet – VPDES Permit No. VA0091201 – Orndorff Rainbow Trout Farm

FACTOR 5: Water Quality Factors

- A. Is (or will) one or more of the effluent discharge limits based on water quality factors of the receiving stream (rather than technology-based federal effluent guidelines, or technology-based state effluent guidelines), or has a wasteload allocation been assigned to the discharge:

		Code	Points
<input checked="" type="checkbox"/>	Yes	1	10
<input type="checkbox"/>	No	2	0

- B. Is the receiving water in compliance with applicable water quality standards for pollutants that are water quality limited in the permit?

		Code	Points
<input type="checkbox"/>	Yes	1	0 N/A
<input type="checkbox"/>	No	2	5

- C. Does the effluent discharged from this facility exhibit the reasonable potential to violate water quality standards due to whole effluent toxicity?

		Code	Points
<input type="checkbox"/>	Yes	1	10
<input checked="" type="checkbox"/>	No	2	0

Code Number Checked : A 1 B N/A C 2

Total Points Factor 5: A 10 + B N/A + C 0 = 10 TOTAL

FACTOR 6: Proximity to Near Coastal Waters

- A. Base Score: Enter flow code here (from Factor 2): 53

Enter the multiplication factor that corresponds to the flow code: 0.60

Check appropriate facility HPRI Code (from PCS):

	HPRI#	Code	HPRI Score	Flow Code	Multiplication Factor
[]	1	1	20	11, 31, or 41	0.00
[]	2	2	0	12, 32, or 42	0.05
[]	3	3	30	13, 33, or 43	0.10
[X]	4	4	0	14 or 34	0.15
[]	5	5	20	21 or 51	0.10
				22 or 52	0.30
				23 or 53	0.60
HPRI code checked:	4			24	1.00

HPRI code checked: 4

Base Score: (HPRI Score) 0 x (Multiplication Factor) 0.60 = 0 (TOTAL POINTS)

- B. Additional Points --- NEP Program

For a facility that has an HPRI code of 3, does the facility discharge to one of the estuaries enrolled in the National Estuary Protection (NEP) program (see instructions) or the Chesapeake Bay? **N/A**

	Code	Points
<input type="checkbox"/> Yes	1	10
<input type="checkbox"/> No	2	0

- C. Additional Points --- Great Lakes Area of Concern

For a facility that has an HPRI code of 5, does the facility discharge any of the pollutants of concern into one of the Great Lakes' 31 areas of concern (see Instructions)? **N/A**

	Code	Points
<input type="checkbox"/> Yes	1	10
<input type="checkbox"/> No	2	0

Code Number Checked : A 0 B N/A C N/A

Points Factor 6: A 0 + B N/A + C N/A = 0 TOTAL

Fact Sheet – VPDES Permit No. VA0091201 – Orndorff Rainbow Trout Farm

SCORE SUMMARY

Factor	Description	Total Points
1	Toxic Pollutant Potential	<u>5</u>
2	Flows/Stream Flow Volume	<u>30</u>
3	Conventional Pollutants	<u>0</u>
4	Public Health Impacts	<u>0</u>
5	Water Quality Factors	<u>10</u>
6	Proximity to Near Coastal Waters	<u>0</u>
TOTAL (Factors 1-6)		<u>45</u>

S1. Is the total score equal to or greater than 80? ☐ Yes (Facility is a major) ☒ No

S2. If the answer to the above questions is no, would you like this facility to be discretionary major?

☒ No

☐ Yes (Add 500 points to the above score and provide reason below:

Reason:

New Score: 45

Old Score: 50

Eric Millard
Permit Reviewer's Name
540-574-7813
Phone Number
December 13, 2012
Date

Fact Sheet – VPDES Permit No. VA0091201 – Orndorff Rainbow Trout Farm

APPENDIX C

EFFLUENT SCREENING AND EFFLUENT LIMITATIONS

EFFLUENT LIMITATIONS

A comparison of technology and water quality-based limits was performed and the most stringent limits were selected, as summarized in the table below.

Outfall 001

Final Limits

Facility Average Flow: 0.754 MGD

PARAMETER	BASIS FOR LIMITS	EFFLUENT LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average		Maximum		Frequency	Sample Type
Flow (MGD)	1	NL		NL		1/Month	Estimate
TSS	2	NL mg/L	NL kg/d	NL mg/L	NL kg/d	1/Month	Composite
Suspended Solids, Monthly Load (lb/month)	3	NA		NL		1/Month	Calculated
Suspended Solids, Year to Date (lb/year) *	3	NA		NL		1/Month	Calculated

* = Report Year to Date load as the sum of the monthly lb/month load values during the calendar year.

NL = No Limitation, monitoring required

Composite = Combination of eight or fewer hourly grab samples, collected over the duration of a normal operating day during periods of representative discharges, including discharges during fish harvesting, unit cleaning, and/or solids removal operations.

BASIS DESCRIPTIONS

1. VPDES Permit Regulation (9 VAC 25-31)
2. Best Professional Judgment (BPJ)
3. EPA directive from 2/7/08 conference call.

Fact Sheet – VPDES Permit No. VA0091201 – Orndorff Rainbow Trout Farm

LIMITING FACTORS – OVERVIEW:

The following potential limiting factors have been considered in developing this permit and fact sheet:

Water Quality Management Plan Regulation (WQMP) (9 VAC 25-720)	
A. TMDL limits	TSS via approved BMPs
B. Non-TMDL WLAs	None
C. CBP (TN & TP) WLAs	None
Federal Effluent Guidelines	40 CFR 451
BPJ/Agency Guidance limits	TSS
Water Quality-based Limits - numeric	None
Water Quality-based Limits - narrative	None
Technology-based Limits (9 VAC 25-40-70)	None
Whole Effluent Toxicity (WET)	Not applicable
Storm Water Limits	Not applicable

EVALUATION OF THE EFFLUENT:

The 1998¹ Fact Sheet (FS) developed for the issuance of the General Permit for Concentrated Aquatic Animal Production Facilities documented the state-wide evaluation of the discharges authorized by individual VPDES Permits for these facilities. The FS documented the review of the available effluent data and determined that: 1) Ammonia-N, Dissolved Oxygen, BOD, Temperature, pH and Nutrients are not significant in the discharges; 2) Ammonia-N, Dissolved Oxygen, BOD, pH and Nutrients are associated with solids (controlled by TSS and SS limitations); 3) there is no evidence for Oxygen depletion due to BOD; 4) Ammonia-N was present in low concentrations and limits were not required when performing a reasonable potential analysis for toxics under worst case conditions; and 5) nutrients were at low levels consistent with the nutrient policy. This new information satisfied the exception to the antibacksliding policy and no limits for these parameters were imposed in the individual permits issued in 2003.

Previous benthic surveys indicate the benthos in Orndorff Spring Branch have been impacted by excessive solids. Technology-based effluent limits for Total Suspended Solids (TSS) and Settleable Solids (SS), with concurrent flow monitoring, were imposed in the General Permit based on Agency guidance.² A water quality based special condition was also imposed as a performance criterion for organic solids to ensure that the general standard is maintained.

The evaluation of possible stressors performed during the development of a TMDL³ for streams impacted by trout farms considered potential impacts from Ammonia-N (toxic), low DO, temperature, or pH. All instream data for these parameters downstream from these facilities were consistently better than the instream WQS. Nutrients (N and P) were considered probable stressors; however, the TMDL advisory panel of experts concluded that management activities to control solids would also control excess nutrients reaching the impaired streams. Organic solids (OS) were determined to be the critical stressor to the benthic macroinvertebrate community. The TMDL established effluent loads and limitations for TSS that would provide adequate controls for OS. Effluent limitations for SS were not carried forward from the General Permit to this individual permit in 2003 because OS was considered the critical stressor in the discharge. It was documented in the 2002 Fact Sheet⁴ for issuance of this permit that deleting the limits for SS based on new information qualified for the exemption to backsliding provided at 9 VAC 25-31-220.L.2.b.(1).

Fact Sheet – VPDES Permit No. VA0091201 – Orndorff Rainbow Trout Farm

A table comparing the BMPs recommended in the TMDL report with the actions the owner is and may be taking to meet the TMDL goal follows:

TMDL Report Recommended BMPs	Actions taken by Mr. Orndorff	Comments
Redesign existing sediment traps	Multiple settling zones were lengthened and several new zones were added following the TMDL study	The overflow rate in several of the settling zones now meet the requirements outlined in the Idaho Guidelines (referenced in the TMDL report) for full effluent flow settling.
Clean sediment traps every 14 days (~20% reduction)	Implemented	
Install off-line setting basin to facilitate handling of additional solids collected from routine cleaning.	Receiving consideration, but not yet implemented	A solids storage unit will likely be needed to meet future solids land application requirements.
Proper land application of waste solids	Implemented prior to TMDL study	Revised SMP encompassing updated DEQ protocols
Install settling based with 20 minute detention time (~96% reduction); or	In-raceway settling zones have been fully maximized to allow a cumulative 15 minutes of hydraulic retention time	Additional out-of-raceway settling down-gradient of the existing is precluded due to the occurrence of damaging floods across the site
Install constructed wetlands (~50 reduction)	Considered, but not implemented	Precluded due to the occurrence of damaging floods across the site and limited site area necessary for an effective wetland system
	Installation and use of demand feeders	Installed 7 prior to TMDL study and 11 more following study
	Use of high protein, low waste feed	Initiated prior to TMDL study
	Began using extruded, high protein, nearly zero waste floating feed	Initiated in late 2007
	To begin documenting weekly visual inspections of receiving stream noting any abnormal conditions	BMP effective with the previous reissuance

The facility does not meet the definition of “concentrated aquatic animal production facilities” as defined at 40 CFR 122.24⁵ and Appendix C of 40 CFR Part 122⁵. The facility does not have annual production level of 100,000 pounds or more of aquatic animals, and therefore, the discharge is not subject to additional regulations under the Effluent Limitation Guideline at 40 CFR 451.⁶

The facility average flow was established as 0.754 MGD at this reissuance based on the long term average flow indicated in the reissuance application. Flow to the facility is controlled by the springs up-gradient of the facility. Flow is variable based on prevailing climatic conditions and resultant groundwater table elevation.

A follow-up benthic survey of Orndorff Spring Branch will be conducted by DEQ in 2013.

Fact Sheet – VPDES Permit No. VA0091201 – Orndorff Rainbow Trout Farm

References:

1. Fact Sheet for Issuance of a General VPDES Permit to Discharge to State Water and State Certification under the State Water Control Law. (Effective Date: March 5, 1998. Expiration Date: March 5, 2003)
2. Guidance Memo No. 98-2004. Implementation Guidance for VPDES General Permit VAG131000, Concentrated Aquatic Animal Production Facilities.
3. Benthic TMDL Reports for Six Impaired Stream Segments in the Potomac-Shenandoah and James River Basins. Submitted by Virginia Department of Environmental Quality and Virginia Department of Conservation and Recreation. Prepared by The Virginia Water Resources Research Center, Virginia Tech. April 29, 2002.
4. Fact Sheet for Issuance of VPDES Permit No. VA0091201 drafted by C. Kemper Loyd on November 15, 2002.
5. 40 CFR Part 122 - EPA Administered Permit Programs: The National Pollutant Discharge Elimination System, 40 CFR Part 122.24 - Concentrated aquatic animal production facilities (applicable to State NPDES programs, Appendix C to 40 CFR Part 122 - Criteria for Determining a Concentrated Aquatic Animal Production Facility.
6. 40 CFR Part 451 - Concentrated Aquatic Animal Production Point Source Category, Subpart A—Flow-Through and Recirculating Systems

Fact Sheet – VPDES Permit No. VA0091201 – Orndorff Rainbow Trout Farm

APPENDIX D

BASES FOR PERMIT SPECIAL CONDITIONS

Tabulated below are the sections of the permit, with any changes and the reasons for the changes identified. Also provided is the basis for each of the permit special conditions.

Cover Page	Content and format as prescribed by the VPDES Permit Manual.
Part I.A.1.	Effluent Limitations and Monitoring Requirements: <i>Updates Part I.A.1. of the previous permit with the following.</i> <ul style="list-style-type: none">• Changes were made to the introductory language.• The average flow in footnote “a” was revised.
Part I.B.	Effluent Limitations and Monitoring Requirements – Additional Instructions: <i>Identical to Part I.B. of the previous permit.</i>
Part I.C.1.	Materials Handling/Storage: <i>Identical to Part I.C.1. of the previous permit.</i> 9 VAC 25-31-280.B.2. requires that the types and quantities of “wastes, fluids, or pollutants which are ... treated, stored, etc.” be addressed for all permitted facilities.
Part I.C.2.	O&M Manual Requirement: <i>Updates Part I.C.2. of the previous permit.</i> Code of Virginia at 62.1-44.16, VPDES Permit Regulation 9 VAC 25-31-190 E, and 40 CFR 122.41(e) require proper operation and maintenance of the permitted facility.
Part I.C.3.	BMPs and Wastewater Treatment Facilities: <i>Updates Part I.C.3. of the previous permit.</i> Requires approved Best Management Practices (BMPs) and wastewater treatment facilities to be implemented and/or operated on a continual basis. Changes to the BMP plan or planned wastewater treatment facilities shall be submitted for staff approval within 90 days of the effective date of the changes. Applied to the permit using Best Professional Judgment in conjunction with EPA comment and concurrence.
Part I.C.4.	<i>Identical to Part I.C.4. of the previous permit.</i> Requires permittee to notify DEQ within 14 days of completion of construction of any project for which a Concept Engineering Report has been approved. § 62.1-44.16 of the Code of Virginia requires industrial facilities to obtain DEQ approval for proposed discharges of industrial wastewater.
Part I.C.5.	Reopeners: <ul style="list-style-type: none">a. <i>New Requirement:</i> Section 303(d) of the Clean Water Act requires that total maximum daily loads (TMDLs) be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL approved for the receiving stream. The reopener recognizes that, according to section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan, or other wasteload allocation prepared under section 303 of the Act.b. <i>Updates Part I.C.5. of the previous permit:</i> 9 VAC 25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade.
Part I.C.6.	Notification Levels: <i>Identical to Part I.C.6. of the previous permit.</i> Required by the VPDES Permit Regulation 9 VAC 25-31-200 A for all manufacturing, commercial, mining, and silvicultural dischargers.
Part I.C.7.	<i>Identical to Part I.C.7. of the previous permit.</i> Prohibits the discharge of sewage and is required since sewage wastewater discharges were not evaluated for limits under this permit.

Fact Sheet – VPDES Permit No. VA0091201 – Orndorff Rainbow Trout Farm

- Part I.C.8. *Identical to Part I.C.8. of the previous permit.* Prohibits the discharge of fish processing wastewater and is required since fish processing wastewater discharges were not evaluated for limits under this permit.
- Part I.C.9. *Identical to Part I.C.9. of the previous permit.* Prohibits discharges containing unapproved chemicals, toxic chemicals, or chlorine and is required since those parameters were not evaluated for limits under this permit. DEQ shall have the opportunity to review and approve the use of all chemicals used in the production operation through the O&M Manual review and approval process.
- Part I.C.10. *Identical to Part I.C.10. of the previous permit.* The prohibition of the discharge of excess organic solids is based on the narrative section of the WQS regulation.
- Part II **Conditions Applicable to All VPDES Permits:** *Updates to Part II of previous permit.* VPDES Permit Regulation 9 VAC 25-31-190 requires all VPDES permits to contain or specifically cite the conditions listed. Part II,A.4. language added for Virginia Environmental Laboratory Accreditation Program (VELAP) per 1 VAC 30, Chapter 45: Certification for Noncommercial Environmental Laboratories, and 1 VAC 30, Chapter 46: Accreditation for Commercial Laboratories.

DELETIONS

None